Abstract

A method for encapsulation of pharmaceutical agents (e.g., antineoplastic agents) in liposomes is provided, having preferably a high drug:lipid ratio. Liposomes can be made by a process that loads the drug by an active mechanism using a transmembrane pH gradient. Using this technique, trapping efficiencies approach 100%. Drug:lipid ratios employed are higher than for older traditional liposome preparations, and the release rate of the drug from the liposomes is reduced. After loading, residual acid is quenched with a quenching agent that is base permeable at low temperatures. The residual aciditiy is thus reduced and chemical stability (e.g. against hydrolysis) is enhanced. The stability of both the liposome and the pharmaceutical agent is thus maintained, prior to administration. The pH gradient is, however, present when the liposome is administered *in vivo* because the quenching agent rapidly exits the liposome.

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